

j

beyond a certain quantity, for instance, i,
10, 100, and even
1000 times its volume. By immersing an i
iron wire in nitric i
acid of sp. gr. 1.5 it becomes likewise
indifferent to the same l
acid of 1.35.

But by far the most curious fact observed
by me is, that any
number of iron wires may be made
indifferent to nitric acid i
by the following means. An iron wire
with one of its ends
oxidised is made to touch another common
iron wire; both I
are then introduced into nitric acid of sp.
gr. 1.35, so as to i
immerse the oxidised end of the one wire
first into the fluid, i
and have part of both wires above the level of
the acid. Under
these circumstances no chemical action
upon the wires will J
take place, for the second wire is, of course,
but a continuation j
of that provided with an oxidised end.
But no action occurs, j
even after the wires have been separated
from each other. j
If
the second wire having become indifferent be
now taken out of i
the acid and made to touch at any of its
parts not having been j
immersed a third wire, and both again
introduced into the
acid so as to make that part of the second
wire which had pre- j
viously been in the fluid enter first, neither
of the wires will be j
acted upon either during their contact or
after their separation. I
In this manner the third wire can make
indifferent or passive
a fourth one, and so on. j

Another fact, which has as yet, as far as I
know, not been
observed, is the following one. A wire
made indifferent by
any of the means before mentioned is
immersed in nitric acid of i
sp. gr. 1.35, so as to have a considerable
part of it remaining
out of the fluid; another common wire is
put into the same
acid, likewise having one of its ends rising
above the level of
the fluid. The part immersed of this wire
will, of course, be
acted upon in a lively manner. If the ends
of the wires which j
are out of the acid be now made to touch
one another, the i
indifferent wire will instantly be turned
into an active one, i
whatever may be the lengths of the parts
of the wires not
immersed. i
[If there is any instance of
chemical affinity being j
transmitted in the form of a current by
means of conducting j
bodies, I think the fact just stated may be
considered as such.]

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It is a matter of course that direct contact
between the two
wires in question is not an indispensably
necessary condition
for communicating chemical activity from
the active wire to
the passive one; for any metal connecting
the two ends of the
wires renders the same service.
Before passing to another subject, I must
mention a fact